

for the optimum temperature range of stability and activity for enzymes: psychrophilic (below freezing to 10°C); mesophilic (10°C to 50°C); thermophilic (50°C to 75°C); and caldophilic (75°C to above boiling water temperature). The stability and catalytic activity of enzymes are linked characteristics, and the ways of measuring these properties vary considerably. For industrial enzymes, stability and activity are best measured under use conditions, often in the presence of substrate. Therefore, cellulases that must act on process streams of cellulose must be able to withstand exposure up to thermophilic or even caldophilic temperatures for digestion times in excess of several hours.

Please replace the second full paragraph on page 15, beginning line 16, with the following: Cellulases belong to the GH family of enzymes. Cellulases are produced by a variety of bacteria and fungi to degrade the beta-(1,4)-glycosidic bond of cellulose and to so produce successively smaller fragments of cellulose and ultimately produce glucose. At present, cellulases are found in at least 11 different GH families. Three different types of cellulase enzyme activities have been identified within these GH families: exo-acting cellulases which cleave successive disaccharide units from the non-reducing ends of a cellulose chain; endo-acting cellulases which randomly cleave successive disaccharide units within the cellulose chain; and β -glucosidases which cleave successive disaccharide units to glucose (J. W. Deacon, (1997) Modern Mycology, 3rd Ed., ISBN: 0-632-03077-1, 97-98).

Please replace the first full paragraph on page 17, beginning line 4, with the following:

Gux1, as noted above, has a catalytic domain, identified as belonging to the GH48 family. The GH48 domain family includes a number of exoglucanases, for example, from *Cellulomonas fimi*, and exoglucanase E6 isolated from *Thermobifida fusca*. The GH48 members degrade substrate using an inverting mechanism. Being a member of the GH48 family of proteins identifies Gux1 as potentially having exoglucanase activity. In addition, the predicted amino acid sequence (SEQ ID NO: 1) indicates that CBD type II and CBD type III domains are present as characterized by Tomme P. et al. (1995), in Enzymatic Degradation of Insoluble Polysaccharides (Saddler JN & Penner M, eds.), at